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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,283	02/10/2005	Charles Perkins	03-20 US	6390

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Varian Inc.
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EXAMINER

CHRISTENSEN, RYAN S

ART UNIT PAPER NUMBER

2856

DATE MAILED: 08/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/524,283

Applicant(s)

PERKINS ET AL.

Examiner

Ryan Christensen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 7 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 4-7, and 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,661,229 (Bohm et al.) in view of U.S. Patent 6,014,892 (Baret et al.).
4. With respect to claim 1, Bohm et al. disclose an apparatus for leak detection (abstract), comprising: a sealable chamber that (test chamber, Col. 2, lines 44-47), a trace gas (Fig. 1, and test gas, Col. 2, lines 44-49); a trace gas permeable member (7, Fig. 1) mounted in gas communication with the chamber (Fig. 1 and Col. 2, lines 53-57); and a trace gas sensor (8, Fig. 1) comprising an ion pump (ionization gauge 8, Fig. 1) in gas communication with the permeable member

(Fig. 1) and configured to sense trace gas that passed from the chamber through the permeable member (5, Fig. 1). Bohm et al. disclose a vacuum pump (4), which is isolated from gas communication with the sealable chamber (Fig. 1). Bohm et al. suggests that a test specimen be connected to the system (Col. 2, lines 44-47). However, it does not explicitly disclose that the test chamber be configured to receive a piece. However, Baret et al. disclose placing a test piece (part) in the test chamber (enclosure, See Col. 1, lines 39-48). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system taught in Bohm by placing a test piece in the test chamber because this is a manner well known in the art for determining whether a test piece has a leak.

5. With respect to claim 2, Bohm et al. disclose the permeable member is a quartz member (Col. 2, lines 53-57).
6. With respect to claim 4, Bohm et al. disclose the permeable member comprises a polymer member (polymer diaphragms, Col. 2, lines 53-57).
7. With respect to claim 5, Bohm et al. disclose a trace gas permeability of the permeable member is controllable (Col. 3, lines 36-39).
8. With respect to claim 6, Bohm et al. disclose the permeable member is permeable to helium (Col. 3, lines 36-39).
9. With respect to claim 7, Bohm et al. disclose the trace gas sensor comprises an ion pump (ionization gauge 8, Fig. 1).

10. With respect to claim 8, Bohm et al. disclose the trace gas sensor includes means for sensing the trace gas at a specified time after the test piece containing the trace gas is placed in the chamber (Col. 2, line 65 to Col. 3, line 2). The signal processing stage (11) takes measurements from specified times after the piece is in the chamber.
11. With respect to claim 9, Bohm et al. disclose a housing enclosing the permeable member and the trace gas sensor (See Fig. 2, 6, 8, and 9, are enclosed within an unlabeled housing), and a vacuum flange for attaching the housing to the chamber (valve, 10).
12. With respect to claim 10, the combination of Bohm et al. and Baret et al. disclose: a method for leak detection (Bohm abstract) comprising: providing a sealable chamber (Bohm et al., test chamber, Col. 2, lines 44-47), a trace gas permeable member (7, Fig. 1) in gas communication with the chamber (Fig. 1 and Col. 2, lines 53-57) and a trace gas sensor (8, Fig. 1) in gas communication with the permeable member (Fig. 1); placing in the chamber a test piece that, while in the chamber, contains a trace gas (Baret et al., Col. 1, lines 39-48); passing the trace gas from the chamber through the permeable member (Bohm et al., Col. 3, lines 36-39); and sensing the trace gas with the trace gas sensor (Col. 3, lines 36-41).
13. With respect to claim 11, Bohm et al. disclose the permeable member is a quartz member (Col. 2, lines 53-57).

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14. With respect to claim 12, Bohm et al. disclose the permeable member comprises a quartz member (Col. 2, lines 53-57), the method further comprising heating the quartz member (Cil. 3, lines 14-16 and Col. 3, lines 36-39).
15. With respect to claim 13, Bohm et al. disclose the permeable member comprises a polymer member (polymer diaphragms, Col. 2, lines 53-57).
16. With respect to claim 14, Bohm et al. disclose the permeable member is permeable to helium (Col. 3, lines 36-39).
17. With respect to claim 15, Bohm et al. disclose controlling the trace gas permeability of the permeable member (Col. 3, lines 36-39).
18. With respect to claim 16, controlling trace gas permeability of the permeable member controls the sensitivity of leak detection (Col. 2, lines 58-64).
19. With respect to claim 17, Bohm et al. disclose controlling trace gas permeability of the permeable member comprises controlling temperature of the permeable member (Col. 3, lines 36-39).
20. With respect to claim 18, Bohm et al. disclose the trace gas sensor senses helium with an ion pump (ionization gauge 8, Fig. 1 and Col. 3, lines 36-41).
21. With respect to claim 19, Bohm et al. disclose the trace gas sensor includes means for sensing the trace gas at a specified time after the test piece containing the trace gas is placed in the chamber (Col. 2, line 65 to Col. 3, line 2). The signal processing stage (11) takes measurements from specified times after the piece is in the chamber.

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22. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 5,661,229 (Bohm et al.) and U.S. Patent 6,014,892 (Baret et al.) as applied to claim 1 above, and further in view of U.S. Patent 3,280,619 (Spies). With respect to claim 3, Bohm et al. disclose the permeable member comprises a quartz member (Col. 2, lines 53-57), the apparatus further comprising a heating element (heating filaments, 16, Fig. 2) in thermal contact with the quartz member (Fig. 2) and suggests that the heating elements be turned on and off (Col. 2, lines 58-64 and Col. 3, lines 36-39) in the operation of the apparatus. However, the combination of Bohm et al. and Baret et al. does not explicitly disclose a controller for turning the heating elements on and off. Spies discloses a controller for controlling heater elements in a leak detection system where the heating elements are used to change the permeability of a quartz (Col. 4, lines 44-54). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system taught in the combination as applied to claim 1 by adding a control unit to control the heaters because it is well known in the art to activate heaters by supplying current and it is also well known to control the current supply to heater with a control unit.

Pertinent Prior Art

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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U.S. Patent 5,561,240 (De Simon) discloses a helium detecting device for determining leaks in articles

U.S. Patent 5,193,380 (Tallon) discloses a helium leak detector with a selective filter for Helium,

U.S. Patent 4,918,975 (Voss) discloses leak detection with a trace gas such as helium with a membrane permeable to the trace gas.

U.S. Patent 3,951,827 (Hall) discloses an ion pump, a membrane permeable to trace gasses as well as a mass spectrometer for determining leaks of various sizes.

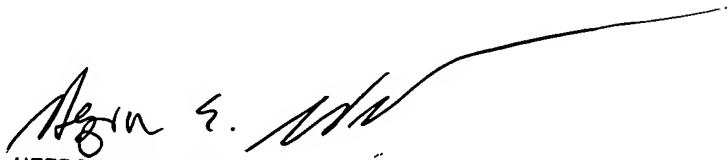
Conclusion

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Christensen whose telephone number is 571-272-2683. The examiner can normally be reached on Monday - Friday, 8am - 5pm.
25. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RC



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